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THE ORBITS OF SIRIUS AND OF 83 AQUARI

Lick Observatory Bulletins 316 and 317 contain the details of my investigations of the orbital motion of *Sirius* (= A. G. C. 1) and of 83 *Aquarii* (= A417) based upon all available data. The elements derived are given below. It will be seen that the period of *Sirius* resulting from the least squares solution is practically identical with that given in my note on page 194 of the June number of these PUBLICATIONS. A discussion of the radial velocities of *Sirius* measured in the years 1891 to 1916 resulted in the conclusion that the observations give no definite evidence of any short period disturbance in the orbital motion of the star.

M. Robert Jonckheere has a paper on the orbit of *Sirius* in the *Monthly Notices R. A. S.* for June, 1918, a copy of which has just reached Mount Hamilton. The elements he gives, obtained by an ingenious application of the graphical methods of Zwiers and Russell, I have added for comparison with my own. It will be seen that the two sets are nearly identical, and I think we may safely conclude that they represent the best results to be obtained from the available data.

The orbit of A417 rests entirely upon my own measures, which cover an arc of 270° . I am not aware that the pair has been measured by any other observer. The elements given satisfy all of the observations within the error of measure, but they must be regarded as only a first approximation to the true values. Improvement will be possible when one entire revolution has been observed. The ephemeris indicates that the pair will be within the power of moderate sized telescopes during the next few years and it is hoped that other observers will give it attention.

ELEMENTS OF SIRIUS

	AITKEN	JONCKHEERE
P	50.04 ± 0.09 years	50.00 years
T	1894.133 ± 0.011 years	1894.10
e	0.5945 ± 0.0023	0.60
a	$7''.570$	$7''.55$
i	$+43^\circ.31 \pm 0^\circ.25$	$43^\circ.4$
ω	145.69 ± 0.38	145.6
Ω	42.71 ± 0.33	42.7
	Angles decreasing.	

ELEMENTS OF 83 AQUARI

$$P = 23.82 \pm 1.37 \text{ years}$$

$$T = 1917.68 \pm 0.20 \text{ years}$$

$$e = 0.404 \pm 0.016$$

$$a = 0^{\circ}.245 \pm 0^{\circ}.005$$

$$i = \pm 56^{\circ}.35 \pm 4^{\circ}.1$$

$$\omega = 261.3 \pm 5.4$$

$$\Omega = 21.6 \pm 2.4$$

Angles increasing.

ROBERT G. AITKEN.

September, 1918.

RETURN OF ECLIPSE INSTRUMENTS FROM RUSSIA

The Lick Observatory eclipse apparatus and supplies, stored in the Russian National Observatory at Poulkovo during three years following the total solar eclipse of August 21, 1914, were started on their long journey home on August 15, 1917, and arrived at Mt. Hamilton on August 21, 1918. Upon unpacking them we were relieved to find every item present and in good order, save that the chronometer had suffered minor damage from rough handling. The packing boxes were well on the way to the state of kindling, but fortunately their strong bindings of strap iron and wire held them together.

The return shipment included also the Amherst College eclipse equipment taken to Russia by Professor Todd.

The shipment was delayed at least four months at Vladivostock, and nearly three months at Kobe, for reasons beyond our control.

The special eclipse equipment was sadly missed by the Crocker Expedition at Goldendale, Washington, on June 8, 1918.

W. W. C.